WHAT IS CLAIMED IS:

1. A control apparatus for numerical control in a cutting machine having a turret to be rotated to arbitrary positions, said control apparatus comprising:

means for inputting cutting edge data (m, n) indicating a position of a cutting edge of a cutting tool;

means for inputting turret angle data (α) indicating an extent of rotation of said turret;

means for reading reference offset values (X0, Z0) corresponding to a length from said cutting edge to a turret axis (B);

means for obtaining offset data ($X\alpha$, $Z\alpha$) from said reference offset values (X0, Z0) and said turret angle data (α);

means for adding said cutting edge data (m, n) to said offset data ($X\alpha$, $Z\alpha$) to obtain turret axis data (ΔX, ΔZ); and

means for moving said turret on the basis of said turret axis data (ΔX, ΔZ) to perform a cutting.

2. A control apparatus according to claim 1, wherein a set of said offset data ($X\alpha i$, $Z\alpha i$) corresponding to a position of said cutting edge is calculated from said reference offset values (X0, Z0) and the corresponding turret angle data (αi) on the basis of the following equations 1 and 2.

$$X\alpha i = Z0 \cdot \cos \alpha i - X0 \cdot \sin \alpha i \qquad \text{(equation 1)}$$

$$Z\alpha i = Z0 \cdot \sin \alpha i + X0 \cdot \cos \alpha i \qquad \text{(equation 2)}$$

3. A control apparatus according to claim 2, wherein a set of said turret axis data (ΔXi, ΔZi) corresponding to a position of said cutting edge is calculated from the corresponding offset data ($X\alpha i$, $Z\alpha i$) and the corresponding cutting edge data (mi, ni) on the basis of the following equations 3 and 4.

$$\Delta Xi = mi + X\alpha i \qquad \text{(equation 3)}$$

$$\Delta Zi = ni + Z\alpha i \qquad \text{(equation 4)}$$

4. A cutting machine including the control apparatus according to any of claims 1 through 3.

5. A cutting method employing a cutting machine having a turret to be rotated to arbitrary positions, comprising the steps of;

inputting cutting edge data (m, n) and turret angle data α;

reading reference offset values (X0, Z0);

calculating offset data ($X\alpha$, $Z\alpha$) from said turret angle data (α) and said reference offset values (X0, Z0);

calculating turret axis data (ΔX, ΔZ) from said offset data ($X\alpha$, $Z\alpha$) and said cutting edge data (m, n); and

performing a cutting on the basis of said turret axis

data (ΔX, ΔZ).

6. A cutting method according to claim 5, wherein a set of said offset data ($X\alpha i$, $Z\alpha i$) corresponding to a position of said cutting edge is calculated from said reference offset values (X0, Z0) and the corresponding turret angle data (αi) on the basis of the following equations 1 and 2.

$$X\alpha i = Z0 \cdot \cos \alpha i - X0 \cdot \sin \alpha i \qquad \text{(equation 1)}$$

$$Z\alpha i = Z0 \cdot \sin \alpha i + X0 \cdot \cos \alpha i \qquad \text{(equation 2)}$$

7. A cutting method according to claim 6, wherein a set of said turret axis data (ΔXi, ΔZi) corresponding to a position of said cutting edge is calculated from the corresponding offset data ($X\alpha i$, $Z\alpha i$) and the corresponding cutting edge data (mi, ni) on the basis of the following equations 3 and 4.

$$\Delta Xi = mi + X\alpha i \qquad \text{(equation 3)}$$

$$\Delta Zi = ni + Z\alpha i \qquad \text{(equation 4)}$$